Original Article

Patient Safety in Obstetrics and Gynecology Departments of Two Teaching Hospitals in Delhi

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ABSTRACT

Background: A healthy safety culture is integral to positive health care. A sound safety climate is required in Obstetrics and Gynecology to prevent adverse outcomes. **Objective:** The objective of this study was to assess and compare patient safety culture in two departments of Obstetrics and Gynecology. **Materials and Methods:** Using a closed-ended standard version of Hospital Survey on Patient Safety Culture (HSOPS), respondents were asked to answer 42 survey items, grouped into 10 dimensions and two outcome variables in two tertiary care teaching hospitals in Delhi. Qualitative data were compared using Fisher's exact test and chi-square test wherever applicable. Mean values were calculated and compared using unpaired *t*-test. **Results:** The overall survey response rate was 55%. A positive response rate of 57% was seen in the overall perception of patient safety that ranged from very good to acceptable. Sixty-four percent showed positive teamwork across hospital departments and units, while 36% gave an affirmative opinion with respect to interdepartmental handoffs. However, few adverse events (0-10) were reported in the last 12 months and only 38% of mistakes by doctors were reported. Half of the respondents agreed that their mistakes were held against them. There was no statistical difference in the safety culture between the two hospitals. **Conclusions:** Although the perception of patient safety and standards of patient safety were high in both the hospitals' departments, there is plenty of scope for improvement with respect to event reporting, positive feedback, and nonpunitive error.

Keywords: Communication, obstetrics, patient safety, safety culture, teamwork

Introduction

Safety culture is a complex phenomenon that consists of subcultures such as leadership, teamwork, evidence-based practices, communication, learning, and patient-centered practices.[1] Initially, the concept of safety culture was practiced in high-risk areas such as aviation, nuclear energy, and shipping, but health care is an equally challenging, dynamic, and potentially high-risk area. Data show that 50% of adverse events in health care are preventable.[2]

The Institute of Medicine stated that health care organizations should develop and promote a safety culture where adverse events are reported without people being blamed, provide scope for improvement to doctors by enabling them to learn from their mistakes, and prevent further errors.[3] To assess patient safety culture, nine surveys are well identified, out of which psychometric testing quantity and quality

Access this article online

Quick Response Code:

Website: www.ijcm.org.in

DOI: 10.4103/0970-0218.183592

How to cite this article: Gupta B, Guleria K, Arora R. Patient safety in obstetrics and gynecology departments of two teaching hospitals in Delhi. Indian J Community Med 2016;41:235-40.

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Received: 30-01-14, **Accepted:** 08-12-2015

is comprehensive only in four surveys.[4] One such validated and reliable survey is the Hospital Survey on Patient Safety Culture (HSOPS) developed by the Agency for Healthcare Research and Quality (AHRQ), which was used in our study.[5]

Obstetrics and Gynecology involves a dual high risk of both maternal and fetal morbidity and mortality, and requires a sound safety climate to prevent adverse outcomes. Hence we decided to undertake a pilot survey using HSOPS, to assess and compare the safety culture in the departments of Obstetrics and Gynecology of two teaching tertiary care public hospitals. To the best of our knowledge, this is the first of its kind in a developing country.

Materials and Methods

The questionnaire survey (HSOPS) was distributed in the departments of Obstetrics and Gynecology of two tertiary care teaching hospitals in Delhi. The hospitals are located in two different zones of the city and are under different administrations. Both hospitals have an annual delivery rate of more than 10,000 and cater to the middle and low socioeconomic strata of patients.

The questionnaire was distributed by the authors to all consultants, senior residents, and postgraduates of the department working at that point of time in the hospitals after their consent. Junior residents, interns, medical students, nurses, and other paramedical staff were not eligible to participate in the survey. Completed forms were collected after 1 week. Those unable to give a reply were given two reminders at 48 h and again after 3 days, after which they were declared nonresponders and excluded from the survey. Names of doctors were not written on the survey form and confidentiality was ensured.

The completeness of the survey forms was assessed. The form was excluded from analysis if it was less than 50% complete or if consecutive answers were similar under two main headings. If there was more than one answer to a question, it was taken as a missing value. The latter was replaced by the mean of responses for that question.

HSOPS is a validated questionnaire that uses 5-point Likert scales of agreement ("Strongly disagree" to "Strongly agree") or frequency ("Never" to "Always"). It has 10 safety culture dimensions and four outcome variables, for a total of 42 items [Table 1]. The outcome variables are grouped as frequency of event reporting, overall perception of patient safety, patient safety grade, and total number of events reported. The safety culture dimensions at the unit level are expectations and actions of supervisor/manager promoting safety, organizational

Table 1: Safety culture dimensions and reliabilities

Background Variables

What is your primary work area or unit in this hospital?

H1. How long have you worked in this hospital?

H2. How long have you worked in your current hospital work area/unit?

H3. Typically, how many hours per week do you work in this hospital?

H4. What is your staff position in this hospital?

H5. In your staff position, do you typically have direct interaction or contact with patients?

H6. How long have you worked in your current specialty or profession?

Outcome Measures

Frequency of event reporting

D1. When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported?

D2. When a mistake is made, but has no potential to harm the patient, how often is this reported?

D3. When a mistake is made that could harm the patient, but does not, how often is this reported?

Reliability of this dimension — Cronbach's alpha (3 items) = .84

Overall perceptions of safety

A15. Patient safety is never sacrificed to get more work done.

A18. Our procedures and systems are good at preventing errors from happening.

A10r. It is just by chance that more serious mistakes don't happen around here. (Reverse-worded)

A17r. We have patient safety problems in this unit. (Reverse-worded)

Reliability of this dimension—Cronbach's alpha (4 items) = .74

Patient safety grade

E1. Please give your work area/unit in this hospital an overall grade on patient safety.

Single-item measure: grades A through E as response categories.

Number of events reported

G1. In the past 12 months, how many event reports have you filled out and submitted?

Single-item measure: numeric response categories. 46

Safety Culture Dimensions (Unit Level)

Supervisor/manager expectations and actions promoting safety1

B1. My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures.

B2. My supervisor/manager seriously considers staff suggestions for improving patient safety.

B3r. Whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means taking shortcuts. (Reverse-worded)

B4r. My supervisor/manager overlooks patient safety problems that happen over and over. (Reverse-worded)

Reliability of this dimension — Cronbach's alpha (4 items) = .75

Organizational learning-Continuous improvement

A6. We are actively doing things to improve patient safety.

A9. Mistakes have led to positive changes here.

A13. After we make changes to improve patient safety, we evaluate their effectiveness.

Reliability of this dimension — Cronbach's alpha (3 items) = .76

Teamwork within hospital units

A1. People support one another in this unit.

Table 1: (Continued)

A3. When a lot of work needs to be done quickly, we work together as a team to get the work done.
A4. In this unit, people treat each other with respect.
A11. When one area in this unit gets really busy, others help out.
Reliability of this dimension — Cronbach's alpha (4 items) = .83
Openness in communication
C2. Staff will freely speak up if they see something that may negatively affect patient care.
C4. Staff feel free to question the decisions or actions of those with more authority.
C6r. Staff are afraid to ask questions when something does not seem right. (Reverse-worded)
Reliability of this dimension — Cronbach's alpha (3 items) = .72
Feedback and communication about error
C1. We are given feedback about changes put into place based on event reports.
C3. We are informed about errors that happen in this unit.
C5. In this unit, we discuss ways to prevent errors from happening again.
Reliability of this dimension—Cronbach's alpha (3 items) = .78
Nonpunitive response to error
A8r. Staff feel like their mistakes are held against them. (Reverse-worded)
A12r. When an event is reported, it feels like the person is being written up, not the problem. (Reverse-worded)
A16r. Staff worry that mistakes they make are kept in their personnel file. (Reverse-worded)
Reliability of this dimension—Cronbach's alpha (3 items) = .79
Staffing
A2. We have enough staff to handle the workload.
A5r. Staff in this unit work longer hours than is best for patient care. (Reverse-worded)
A7r. We use more agency/temporary staff than is best for patient care. (Reverse-worded)
A14r. We work in "crisis mode," trying to do too much, too quickly. (Reverse-worded)
Reliability of this dimension — Cronbach's alpha (4 items) = .63
Hospital management support for patient safety
F1. Hospital management provides a work climate that promotes patient safety.
F8. The actions of hospital management show that patient safety is a top priority.
F9r. Hospital management seems interested in patient safety only after an adverse event happens. (Reverse-worded)
Reliability of this dimension — Cronbach's alpha (3 items) = .83
Safety Culture Dimensions (Hospital-Wide)
Teamwork across hospital units
F4. There is good cooperation among hospital units that need to work together.
F10. Hospital units work well together to provide the best care for patients.
F2r. Hospital units do not coordinate well with each other. (Reverse-worded)
F6r. It is often unpleasant to work with staff from other hospital units. (Reverse-worded)
Reliability of this dimension — Cronbach's alpha (4 items) = .80
Hospital handoffs and transitions
F3r. Things "fall between the cracks" when transferring patients from one unit to another. (Reverse-worded)
F5r. Important patient care information is often lost during shift changes. (Reverse-worded)
F7r. Problems often occur in the exchange of information across hospital units. (Reverse-worded)
F11r. Shift changes are problematic for patients in this hospital. (Reverse-worded)
Reliability of this dimension—Cronbach's alpha (4 items) = .80

Adapted from Hospital Survey on Patient Safety Culture. June 2014. Agency for Healthcare Research and Quality. Rockville, MD (USA). *With permission*

learning-continuous improvement, teamwork within hospital units, openness in communication, feedback and communication about error, nonpunitive response to error, staffing and hospital management support for patient safety. At the hospital level, the dimensions assessed are teamwork across hospital units and handoffs and transitions. Each dimension has an acceptable reliability (Cronbach's alpha greater than or equal to .60), with reliability coefficients ranging from .63 to .84.[5]

The positive frequency of each response for the survey item was calculated and the missing responses were removed from the denominator. For ease of calculation, out of all 5 responses the lowest 2 response categories (strongly disagree/disagree; never/rarely) and the highest two response categories (strongly agree/agree and most of the time/always) were combined. After the individual calculation of each response, the composite positive frequency of responses on safety culture dimensions were calculated. Qualitative data were compared using Fisher's exact test and chi-square test wherever applicable. Mean values were calculated and compared using unpaired *t*-test. $P < 0.05$ was taken as significant.

Results

Out of a total of 170 eligible doctors, 98 completed the survey form. The overall response rate was 55%, and the difference in the two hospitals was not statistically significant (49% vs 60%). Out of 6 excluded forms, 4 were <50% complete, while 2 had the same answer repeated in 20 consecutive items. Hence a total of 93 survey forms were analyzed.

The background variables of all the participants are summarized in Table 2. All the participants confirmed having direct interaction with patients. On comparing the participant information of the two hospitals, there was a significant difference with respect to staff position, work experience, and duty hours.

Outcome measures

A positive response rate of 57% was seen in the overall perception of patient safety. The overall rating of patient

safety ranged from very good to acceptable. However, only 38% of mistakes by doctors were reported irrespective of their potential to harm the patient. A few adverse events were reported in the last 12 months, ranging 0-10 in both the hospitals. Sixty percent of the participants also noted that the majority of these written reports pertained only to mortality data, while adverse events regarding patient morbidity were seldom reported.

Safety culture dimensions

A composite positive response rate of 55% was obtained on analyzing the hospital-wide safety dimension. Out of this, 64% showed positive teamwork across hospital departments and units, while only 36% gave an affirmative opinion with respect to hospital and interdepartmental handoff and transition.

On analyzing at the unit level, an overall positive response rate was 63%. The eight safety culture dimensions are separately tabulated in Table 3. However, certain individual response rates were notable. Fifty-four percent agreed, while 16% of the participants were neutral in their opinion that their mistakes were held against them. On analyzing the response to question "When an event is reported it feels that the person is written up and not the problem," 53% agreed and 18% were neutral in their opinion. Hence the composite frequency rate of nonpunitive response to error was as low as 39%. With respect to "staffing," 47% agreed, while 20% were neutral regarding the "crisis mode" action of trying to do too much too quickly. Seveny-eight percent also agreed that they spent longer hours in the hospital than was ideal for patient care.

On comparison of the positive frequency of each response to the HSOPS questionnaire between the two hospitals, no significant statistical difference was observed. The various responses in the sections of questionnaire are summarized in Table 4.

Discussion

There is a widespread interest in improving patient safety in health care including Obstetrics and Gynecology. Poor communication and teamwork have been identified in almost 50% of maternal deaths and 43% of malpractice claims in obstetrics.[6,7] Getting the "right patient safety culture" is an important component in improving patient safety, which can be assessed by various surveys. We used the HSOPS questionnaire. Studies have shown that it has similar reliability and predictive validity as the safety attitude questionnaire (SAQ). HSOPS safety culture dimensions were the best predictors of frequency of event reporting and overall perception of patient safety, while SAQ and HSOPS dimensions both predicted patient safety grade.[8]

Table 2: Background information

Background variables	Number (%) *N* = 93
Staff position	
Consultants	19 (20.4)
Residents	74 (79.6)
Current departmental work area unit tenure (years)	
<1	43 (46.2)
1-5	40 (43)
6-10	2 (2.2)
11-15	0 (0)
16-20	4 (4.3)
>21	4 (4.3)
Total departmental tenure (years)	
<1	28 (30)
1-5	52 (56)
6-10	4 (4.3)
11-15	2 (2.2)
16-20	3 (3.2)
>21	4 (4.3)
Working hours per week	
<20	1 (1.1)
20-39	4 (4.3)
40-59	30 (32.3)
60-79	43 (46.2)
80-99	14 (15.1)
>100	1 (1.1)
Tenure in current speciality	
<1	23 (24.7)
1-5	50 (53.8)
6-10	7 (7.5)
11-15	3 (3.2)
16-20	5 (5.4)
>21	5 (5.4)

Table 3: Perception of hospital safety culture dimensions in the unit

Safety culture dimensions in the unit	Composite response rate (positive) (%)
Supervisor/manager expectations and actions promoting safety	74.2
Organizational learning-Continuous improvement	74.5
Team work within hospital units	83
Communication openness	65
Feedback and communication about error	68
Nonpunitive response to error	39.4
Staffing	36.8
Hospital management support for patient safety	58

One of the strategies suggested by the Institute of Medicine, USA to improve patient safety was identification and mandatory reporting of incidents.[3] The event reporting, according to the present survey, dealt mainly with maternal mortality, and events of serious morbidity were seldom reported. Various ongoing projects are collecting data on near-miss maternal mortality in our hospital. Newer projects can

Table 4: Comparison of mean response to HSOPS questions between the two hospitals

Questionnaire variables	Mean score (SD)	Mean difference	Standard error	95% confidence interval	*P*
Think about your hospital work area/unit					
1	59.8 (6)	−2.365	1.193	−4.734, −4.79	0.06
2	62.2(5.3)				
Opinion about immediate supervisor					
1	12.8 (1.4)	−0.55	0.34	−1.26,−1.22	0.1
2	13.4 (1.9)				
Communication					
1	21 (3.1)	0.132	0.611	−1.085, −1.350	0.83
2	20.9 (2.6)				
Frequency of events reported					
1	8.51 (2.47)	−0.82	0.49	−1.805,−1.82	0.1
2	9.3 (2.3)				
Hospital and department					
1	36.4 (2.9)	0.47	0.698	−0.909, 1.864	0.5
2	35.9 (3.55)				

[1,2]Refer to two different hospitals

be undertaken to audit near-miss morbidity on the lines of the UK Obstetric Surveillance System (UKOSS) in order to understand the deficiencies in our own facility.[9]

Almost half of the doctors in our study had an affirmative response to the fact that their mistakes were held against them and that they were held responsible for adverse outcomes. In one of the key components to promote patient safety, the American Congress of Obstetricians and Gynecologists (ACOG) promotes the concept of a "just culture," which accepts that highly competent doctors can also make mistakes.[10] There should be a correct balance between individual accountability and punishment for an unintended human error.[11] Instead of a punitive response, systems must assure that all staff who report the adverse events are supported and acknowledged for their contribution and are continually encouraged by the knowledge that their reporting has led to safer conditions.[12]

Although teamwork was rated high in our survey (64%), there was still a lacuna in interdepartmental handoffs, in which the positive response rate was only 36%. This is similar to another study on surgeon information transfer and communication, where out of 328 case descriptions, 87 reports and 67 reports were of blurred responsibility and inhibited communication respectively, leading to 31% adverse patient consequences.[13] Obstetricians should develop face-to-face standardized handoff protocols and use structured communication techniques such as Situation, Background, Assessment Recommendation (SBAR) wherever possible.[14]

The two hospital departments involved in the survey cater to different geographical areas and have different administrations. However, it is demonstrated from the survey that safety culture is localized by a specific clinical area rather than by a specific hospital.[15,16] There were certain limitations in the survey. The response rate of the survey was 51%, which, although low, was adequate for evaluation. This could be due to the administration of a complex survey to an extremely busy group of doctors, i.e., obstetricians and gynecologists. In addition, there was a difference in the background variables with respect to staff position, work experience, professional tenure, and working hours. However, the overall results were not affected by this bias as this was an observational study. Another small bias was the time frame in which the questionnaire was returned. Some participants returned it in 1 h while some took 1 week. Such time delays can result in changes in the response.

To conclude, although the perception of patient safety and the standards of patient safety were high in both the hospital departments, there is plenty of scope for improvement with respect to event reporting, positive feedback, and nonpunitive error. Event reporting needs to be improved and standardized, as only a few events were reported according to the survey. The adverse event reporting protocol needs to be improved in order to improve patient management, rather than focusing on individual mistakes. Departmental guidelines should be established and updated periodically in response to adverse events and prospective improvement. There is a need for formal training and simulation programs in techniques not only to improve obstetric skills but also for teamwork behavior, communication, and staff attitudes. There is a need for development and testing of better communication tools to improve handoffs both inter- and intradepartmental. Periodic multi-institutional surveys need to be conducted to create a safe culture.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

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